Cancer in the Republic of the Marshall Islands

Cancer Needs Assessment
Febr. 10-14, 2003

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Background

The US National Cancer Institute (NCI) has recently provided funding to understand and address the cancer needs in the US Associated Pacific Countries

Includes all (former) US Trust territories in the Pacific

Project has five objectives:

1. Form a Pacific Basin Cancer Council
2. Complete a comprehensive cancer needs survey in each jurisdiction
3. To utilize the results of the survey to inform US Federal agencies of the cancer prevention/education/diagnostic/ treatment/data requirements of each jurisdiction
4. To utilize the results of the cancer needs survey to acquire federal funding, federal programs, and institutional support to address jurisdictional needs
5. Build the cancer research capacity of each jurisdiction

Local experts who gave us food for thought:

Dr. Russell Edwards, Asst. Secretary PHC
Mr. Jonathan Santos, National Health Planner
Dr. Balachandra, Physician Consultant OIHCS
Dr. Kennar Briand, Medical Director PHC
Mrs. Hellen J. David, Mabel Briand, Grace Heine, Reproductive Health
Dr. Korean, Chief of Medical Staff, Majuro Hospital
Dr. Jimmy Santos, OBGYN, Majuro Hospital
Mrs. Marita Edwin, Health Educator
Mr. Daniel Hone (?), Medical Records Supervisor, Majuro Hospital
Dr. Virgilio Villaroya, Internal Medicine, Majuro Hospital
Laboratory Staff, Majuro Hospital
Mr. Andrew Harding, Pharmacist, Majuro Hospital
Mr. Bill Graham, National Claims Tribunal
Dr. Sheldon Riklon, Ejmour Mokta, DOE clinic
Dr. Justina Langidrik, Secretary PHC

Some baseline statistics and comments:

RMI population 62,569 (WHO 1998 estimate) vs. 50,840 (1999 census) 73,630 (CIA factbook, updated Dec. 2002); discrepancy based on inclusion of overseas Marshallese citizens?

Two hospitals (Majuro and Ebeye) and 49 vs. 60 (?) health centers on outer atolls

Death rate
4.47/1000 (1998 WHO estimate) vs.
4.9/1000 (Vision 2018 based on 1999 Census) vs.
6.07/1000 (CIA factbook, updated Dec. 2002)

Health Status Indicators, RMI

	1988	1999
Death rate	8.9	4.9
Life expectancy		
Both sexes	61.04	67.49
Men	62.57	69.35
Women	59.61	65.72

Total health spending 1999

4% of GDP (Vision 2018):
$ 12,612,906 or $ 248.00 per capita
Approximately 20% of total government budget

$ 3,026,000 or 24% for overseas referrals
(up to $ 7,000,000 in 2001)

Five leading causes of death (based on death certificates)

1998	2002	1996-2000
Malnutrition	Sepsis	Diabetes compl.
Accidents	Cancers	Heart disease
Sepsis	CHF	Cancers
Pneumonia	Pneumonia	Neonatal
Cancers	Resp. failure	Accidents/violence

Cancer and National policy
15 Year Strategic Plan 2001-2015

Field A: Maternal and Child Health Program
Field B: Immunization Program
Field C: Chronic Diseases Program
- **objective C4: Reduce the prevalence of cervical cancer**
- **objective C5: Reduce the prevalence of breast cancer**

Field D: Communicable Diseases Program
Field E: Family Planning Program
Field F: Nutrition Program
Field G: Health Education and Promotion
- **objective G1: Increase % of schools implementing health education**
- **objective G2: Develop pamphlets, posters, videos**

Field H: Human Services Program
- **objective H2: Decrease incidence of alcohol abuse**
- **objective H3: Reduce % stores selling alcohol/tobacco to children**

Field I: Outer Island Health Centers
Field J: Dental Program
Field K: Occupational Health and Safety

Estimating Incidence and/or Prevalence

Absence of National Cancer Registry

Prior data available:

Palafox, Briand et al. ‘Site specific cancer Incidence in the RMI’, Cancer, (83)8:1821-24

Based on National Claims Tribunal (NCT) data

National Claims Tribunal

Established 1987, first payment 1991

Strictly defined malignancies/illnesses eligible for compensation, currently 36 total

Eligible if alive or in-utero in RMI 1946-1958 plus 1st generation off-spring with onset of illness 1951

Dec. 1996 total of 470 decedents diagnosed with cancer were reported to NCT

Complete information on site, age at diagnosis, and year of diagnosis available on 411 (87%)

165 with documentation supporting cancer that occurred between 1985 and 1994

Age-adjusted cancer incidence RMI, 1985-1994 by site and sex, compared with the US

Site	RMI Male	Female	US Male	Female
Lung	**314**	**122**	**82**	**40**
Cervix	**-**	**278**	**-**	**48**
GI	22	43	12	5
Liver	**72**	**72**	**5**	**2**
Breast	-	149	-	110
Urinary tract	18	81	43	14
Oral	55	9	16	6
Prostate	32	-	51	-
Thyroid	?	46	3	6
Total	563	883	466	342

Incidence rates higher in nearly all categories in RMI

Suggested risk factors:

Radiation
Malnutrition (particular vit. A deficiency)
Smoking
Alcohol use
High STD rates

Limitations of study leading to very conservative estimation:

Underdeveloped health record keeping
Potentially not all cases reported to NCT
No attempt made to attempt data on pts. living with cancer

Other potential incidence/prevalence sources besides NCT

1. National mortality data (death certificates)

Reliable as far as absolute numbers are concerned, per all sources plus statistical estimates, but cancers severely underreported

2000	2001	2002
26/298	16/283	23/227
(6 cervix CA)	(2)	(3)

Per Palafox et al. at least 145/100,000 per year
NCT 859 malignancy claims by 8/2000, increase of 389 over 12/1996 or about 100/yr, likely to be more recent cases

2. Majuro Hospital admission/discharge data being collected – Analysis might give insight in no. of known pts. living with cancer

Assessed Needs

1. Improved cancer prevention/screening/diagnostic modalities.
   Improved screening and diagnosis are especially important for cancers with good cure rates but, on theother hand, also for those with expected survival less than 50% in 5 years

a. Increase number of PAP smears (1999, 8% of eligible women underwent PAP smear):

- provide kits and guarantee supply
- more nurses/staff trained in performing PAP smears
- more education for target group
- improved tracking of results, especially for abnormal smears and outer island patients

b. Recruit pathologist as open biopsies and FNA possible locally, but results need to be sent out: long turn-around time plus expensive

c. Education to increase acceptability of autopsies

d. Increase HCM awareness of ALL health care personnel to increase

- PAP smears
- breast self exam
- mammograms
- Thyroid palpation on routine clinic visit
- Colon CA screening
- Prostate exam

e. Recruit radiologist to facilitate X-ray and mammogram readings (sent to Guam at this time), and potentially CT scans in future

f. Acquire CT-scanner (estimated $ 1,000,000; maintenance?; planned for new hospital wing)
Could pay itself back fast by allowing for local diagnosis/ staging of 85/364 cancer related off island referrals in 1.5 years. Would likely greatly reduce number of pts. sent off-island with expected survival < 50% in 5 years.

g. Upgrade pharmacy and staff + familiarize interested physicians to allow for maintenance chemo on Majuro

h. Improve outer island palliative/comfort care; only Tylenol available at this time

i. Improve/increase educational efforts regarding cancer prevention, including smoking cessation, STD prevention, and acceptability of PAP smear

- educate/train the educators
- community meetings
- TV/radio advertising
- through high school curriculum

j. Secure continuity in supply of lab reagents plus additional training for lab personnel

2. Improved data gathering and epidemiological follow-up

a. Improved data availability through improved diagnostics as above
b. ICD-10 coding training for Medical Records staff
c. Acquire SAS data analysis program for National Health planner
d. Additional staff recruitment for both Medical Records and National Health Planner
e. Recruit epidemiologist to analyze progress according to original 15 yrs. Strategic Plan (Asian Development Bank consultant helped to write original plan, no follow-up on progress)